

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 163 857 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 158(3) EPC

(43) Date of publication:
19.12.2001 Bulletin 2001/51

(51) Int Cl.⁷: **A24D 1/04**

(21) Application number: **00911523.9**

(86) International application number:
PCT/RU00/00060

(22) Date of filing: **23.02.2000**

(87) International publication number:
WO 00/57734 (05.10.2000 Gazette 2000/40)

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

• **Pogoslan, Semen**
Yaroslavskaya obl. 152149 (RU)

(30) Priority: **12.03.1999 RU 99104408**

(72) Inventors:
• **Pogoslan, Selran**
Yaroslavskaya obl. 152149 (RU)
• **Pogoslan, Semen**
Yaroslavskaya obl. 152149 (RU)

(71) Applicants:
• **Pogoslan, Selran**
Yaroslavskaya obl. 152149 (RU)

(74) Representative: **Kador & Partner**
Corneliusstrasse 15
80469 München (DE)

(54) SMOKERS' ARTICLE

(57) The present invention pertains to the tobacco industry and may be used in the production of smokers' articles that include a mouthpiece and consist of a new product that conjugates the functional properties and qualities of cigarettes with a cardboard mouthpiece and of filter cigarettes. To this end, this smokers' article comprises a tobacco rod wrapped in a separate sleeve of cigarette paper as well as a flexible and elongated mouthpiece which is connected to said rod and has the size of a cardboard mouthpiece. The mouthpiece is made of a pressed fibrous material and includes a filter

member, which is arranged on the tobacco rod side, which is integral with the tubular portion of the mouthpiece and which is made in the shape of a continuous cylinder having a diameter equal to that of the mouthpiece tubular portion. The tobacco rod is connected to the mouthpiece by a paper ring. The fact that the cylindrical filtration member is integral with the mouthpiece and consists of the same fibrous material prevents the smoke from flowing without undergoing a filtration cycle in the mouthpiece and also prevents tobacco chips from falling therein.

EP 1 163 857 A1

Description

Field of Invention

[0001] The present invention pertains to the tobacco industry and may be used in the production of smokers' articles that include a mouthpiece and consist of a new product conjugating the functional properties and qualities both of cigarettes with a cardboard mouthpiece and of filter cigarettes.

Prior Art

[0002] Known in the art are different types of cigarettes that have in common a tobacco rod wrapped in a sleeve made of cigarette paper, a shortened paper mouthpiece and an autonomous, immovable and solid filter member, wherein all the elements being connected so as to shape a single article by a paper ring overlapping a portion of the tobacco rod, the filter member and the mouthpiece; US Pat. No. 3,498,299, IPC A24D 1/04, 1970; GB Pat. 2,203,324, IPC A24D 1/04, 1988.

[0003] Also known in the art is a cigarette with a movable filter member, which consists of a tobacco rod wrapped in a sleeve made of cigarette paper and a paper mouthpiece connected thereto; the said mouthpiece contains a nylon or polyethylene filter member made in the shape of a sliding piston moving inside the mouthpiece with raise in the smoke pressure during smoking and adjusting the volume of air inflow; additional filter members, made of acetate fiber, may be arranged at the inlet end or at the outlet end of the mouthpiece; GB Pat. 1,330,936, IPC A24D 1/04, 1973.

[0004] Also known in the art are cigarettes having a paper mouthpiece and a shortened tobacco rod wrapped in a sleeve made of cigarette paper and connected with the said mouthpiece with a paper ring; DE Pat. 1,782,478, IPC A24D 1/04, 1975.

Known in the art are cigarettes containing a paper mouthpiece connected by a paper ring with a tobacco rod wrapped in a sleeve made of cigarette paper, wherein a cylindrical insert with holes is arranged in the mouthpiece and shapes two combustion chambers for smoke and the said mouthpiece has holes for air inflow along its perimeter; DE Pat. 1,278,914, IPC A24D 1/04, 1968; FR Pat. 2,497,636, IPC A24D 1/04, 1982.

[0005] Also known in the art are cigarettes containing a tobacco rod wrapped in a sleeve made of cigarette paper and a tubular filter member adjacent to the said tobacco rod, one end of the said filter member having a bottom part with a slot therein, which is connected to the said end of the tobacco rod, and the other end of the filter member is open and may have a solid additional filter member closing the said opened end; US Pat. 4,896,682, IPC A24D 1/04, 1990.

[0006] The common feature of all the above cigarettes is that the filter member or the shortened mouthpiece is held between the lips, and the cigarette is held between

fingers in the area of the tobacco rod or at the point of its junction with the filter member. Such smoking leads to yellowing of the fingers' skin and nails, and in a case where a cigarette is held by the shortened mouthpiece only, fingers touch the lips, which is undesirable. In a wet weather cigarette paper of the tobacco rod, as in contact with wet fingers, is destroyed and one has to smoke cigarettes holding them by the thumb and the forefinger only by the shortened mouthpiece, which is often not convenient and not hygienic, since fingers touch the portion of the mouthpiece that is intended to be held by the lips.

[0007] The said disadvantages are partially eliminated by a smokers' article of another type, which is a cigarette with a cardboard mouthpiece. Such a cigarette has an elongated cardboard mouthpiece intended for holding the cigarette with fingers without touching the tobacco rod and allows not to touch its portion that is intended for holding by the lips.

[0008] However, smokers' articles in the shape of cigarettes with an elongated cardboard mouthpiece of high quality and with an advanced filter member are not widely used by now.

[0009] Known in the art is a smokers' article consisting of a tobacco rod wrapped in a sleeve made of cigarette paper, an elongated cardboard mouthpiece and an autonomous immovable solid filter member located in the outlet portion of the mouthpiece, the latter being connected to the tobacco rod with a paper ring; US Pat. 3,524,450, IPC A24D 1/04, 1970; SU Pat. 259745, IPC A24D 1/04, 1970.

[0010] This smokers' article is not widely used because the tubular mouthpiece made of paper gets wet, collapsed, and the smoke may bypass the filter member, going between the exterior surface of the filter member and the paper mouthpiece overlapping it.

Description of Invention

[0011] It is an object of this invention to create a smokers' article of new type having advantages of both usual cigarettes and cigarettes with a cardboard mouthpiece, but, at the same time, having no disadvantages peculiar to the both commonly known types of smokers' articles.

[0012] This object is attained in a smokers' article that comprises a tobacco rod wrapped in a separate sleeve made of cigarette paper and an elongated and resilient mouthpiece which is connected to the said rod and has the size of a cardboard mouthpiece (that is, the tubular part of a mouthpiece exceeds 40 mm). The mouthpiece is made of a pressed fibrous material and includes a filter member which is arranged on the tobacco rod side, is integral with the tubular portion of the mouthpiece and is made in the shape of a continuous cylinder having a diameter equal to that of the mouthpiece tubular portion. The length of the said mouthpiece exceeds that of the tobacco rod, and the length of the said cylindrical filter member is at least half as great as the length of the to-

tobacco rod and at least one third as great as the length of the said tubular portion of the mouthpiece. The tobacco rod is connected to the elongated mouthpiece with a paper ring overlapping, at least, the surface of the cylindrical filter member, and the fibrous material of the mouthpiece is pressed to such a degree so as to ensure restoration of the tubular portion open flow area after removal of compressive load under which the tubular portion has been fully compressed.

[0013] As a material for making a resilient mouthpiece and, consequently, a cylindrical filter member acetate fiber may be used, which is used for making cigarette filter members.

[0014] An additional filter member made of activated carbon or the like materials may be arranged between the tobacco rod and the cylindrical filter member.

[0015] An additional filter member may be also arranged behind the cylindrical filter member inside the tubular portion of the mouthpiece.

[0016] The said resilient and elongated mouthpiece made of a pressed fibrous material may be wrapped in a paper sleeve, and the said paper ring may be connected with a glue to the outer surface of the said paper sleeve.

[0017] The resilient and elongated mouthpiece made of a pressed fibrous material may have the plasticized outer surface that enables not to enclose it in an additional paper sleeve, since a plasticized surface is free from roughness peculiar to a fibrous structure and protects the outer surface of fibers from splitting during smoking.

[0018] As a plasticizer a polyvinyl acetate emulsion may be used, which is a product obtained by polymerizing vinyl acetate in an aqueous medium under heating in the presence of an emulsifier. Also, other plasticizers may be used which are compatible with a given fibrous material of the tubular mouthpiece and capable of forming a thin, smooth and monolith layer with outer fibers of the said fibrous material. This procedure of making completely prevents smoke from passing through the mouthpiece without entering the filter member.

[0019] A resilient and elongated mouthpiece made of a pressed fibrous material and having the plasticized outer surface may have a ring section not covered with a plasticizer and arranged after the paper ring to ensure additional air inflow when smoking.

[0020] Such a smokers' article ensures a high intake of substances contained in smoke, i.e. nicotine, tars, etc., since it has a large active adsorbing surface area.

[0021] The fact that the cylindrical filter member is integral with the mouthpiece and consists of the same fibrous material prevents the smoke from flowing without undergoing a filtration cycle in the mouthpiece and also prevents tobacco chips from falling therein. The selected proportions of the smokers' article elements ensure comfort and hygiene when smoking, and the mouthpiece ensures the possibility of holding the article with fingers without touching the lips while smoking and with-

out contact between fingers and the portion held by the lips. The use of a fibrous material for the mouthpiece ensures restoration of its shape after squeezing the mouthpiece with fingers, the smoke, while passing through the said fibrous material, cools down, the fibrous structure of the mouthpiece ensures retention of heat and absorption of the lips' moisture, keeping the outer surface dry (mouthpieces made of cigarette paper and cigarette filter members wrapped in cigarette paper get wet during smoking).

Brief Description of Drawings

[0022]

FIG. 1 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material wrapped in a paper sleeve.

FIG. 2 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material and an additional filter member made of activated carbon which is arranged adjacent to the tobacco rod.

FIG. 3 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material and an additional filter member made of activated carbon which arranged behind the tobacco core.

FIG. 4 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material and additional filter member made of activated carbon and arranged inside the said mouthpiece.

FIG. 5 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material and having the plasticized surface.

FIG. 6 is a cross sectional view of the smokers' article with a mouthpiece made of a pressed fibrous material having, behind a paper ring, a ring portion that is not covered with a plasticizer. The arrows show how the smoke and aspirated air pass through the elements of the smokers' article.

Best Embodiments of the Invention

[0023] The smokers' article (Fig. 1 - Fig. 6) comprises a tobacco rod 2 wrapped in a separate sleeve 1 made of cigarette paper and a resilient and elongated mouthpiece 3 which is connected to the said rod and has the size of a cardboard mouthpiece (the length of the tubular portion is at least 40 mm). The mouthpiece is made of a pressed fibrous material and has, on the side of the tobacco rod 2, a filter member 5 made integral with the tubular portion 4, said filter being made of the same fibrous material and being made in the shape of a continuous cylinder having a diameter (D) equal to the diameter (d) of the mouthpiece tubular portion. The total length (L) of the said mouthpiece exceeds the length (S)

of the tobacco rod, and the length (T) of the cylindrical filter member 5 is at least half as great as the tobacco rod length (S) and at least one third as great as the length (B) of the mouthpiece tubular portion 4. The tobacco rod 1 is connected to the elongated mouthpiece 3 by a paper ring 6 at least overlapping the surface of the cylindrical filter member 5, and the mouthpiece fibrous material is pressed so as to ensure restoration of the open flow area of the tubular portion 4 after removal of the compressive load under which the tubular portion has been fully compressed.

[0024] Acetate fiber commonly used for making cigarette filters may be used as a material for making a resilient mouthpiece 3 and, consequently, a cylindrical filter member 5.

[0025] Between the tobacco rod 2 and the cylindrical filter member 5 an additional filter member 7 may be arranged, being made of activated carbon or a similar material (Fig. 3).

[0026] The said additional filter member 7 may be also arranged behind the cylindrical filter member 5 inside the tubular portion 4 of the mouthpiece (Fig. 4).

[0027] The resilient and elongated mouthpiece 3 made of a pressed fibrous material may be wrapped in the paper sleeve 8, and the paper ring 6 may be glued to the outer surface of the paper sleeve 8 (Fig. 2).

[0028] The resilient and elongated mouthpiece 3 made of a pressed fibrous material may have the plasticized outer surface 9 (Fig. 5), which makes its wrapping into an additional paper sleeve unnecessary since the plasticized surface is free from roughness conditioned by fibrous structure and protects the outer surface of fibers from splitting during smoking.

[0029] As a plasticizer a polyvinyl acetate emulsion may be used, which is a product obtained by polymerizing vinyl acetate in an aqueous medium under heating in the presence of an emulsifier. Also, other plasticizers may be used which are compatible with a given fibrous material of the tubular mouthpiece and capable of forming a thin, smooth and monolith layer with outer fibers of the said fibrous material. This procedure of making completely prevents smoke from passing through the mouthpiece without entering the filter member.

[0030] A resilient and elongated mouthpiece 3 made of a pressed fibrous material and having the plasticized outer surface 9 may have a ring section 10 (Fig. 6) not covered with a plasticizer and arranged after the paper ring 6 to ensure additional air inflow when smoking. The said paper ring 6 may completely overlap the said resilient and elongated mouthpiece 3 (this is not shown on Figs. 1 - 6). Such a smokers' article ensures a high intake of substances contained in smoke, i.e. nicotine, tars, etc., since it has a large active adsorbing surface area.

[0031] The making of the cylindrical filter member 5 integral with the mouthpiece 3 and of the same fibrous material is highly technological and prevents the smoke from flowing without undergoing a filtration cycle in the

mouthpiece and also prevents tobacco chips from falling therein. The selected size relation of the members of the smokers' article ensures comfort and hygiene when smoking. The smokers' article is balanced and may be conveniently held between the middle finger and the forefinger, the thumb being not in contact with the inlet portion of the mouthpiece. The mouthpiece ensures the possibility of holding the smokers' article between the fingers, without touching the lips when smoking.

[0032] Some smokers are used to squeeze the mouthpiece between their fingers when smoking and grip it by their teeth. The use of a fibrous material for the mouthpiece ensures restoration of its shape after squeezing the mouthpiece with fingers, the smoke, while passing through the said fibrous material, cools down, the fibrous structure of the mouthpiece ensures retention of warmth and absorption of the lips' moisture, keeping the outer surface dry (mouthpieces made of cigarette paper and cigarette filter members wrapped in cigarette paper get wet during smoking).

[0033] In a particular embodiment the smokers' article has the following parameters: total length - 120 mm, length of the tobacco rod - 50 mm, length of the resilient mouthpiece - 70 mm, length of the cylindrical filter member - 12 mm, length of the paper ring - 35 mm, outer diameter of the mouthpiece - 7 mm, inner diameter of the mouthpiece tubular portion - 5 mm, mouthpiece material - pressed acetate fiber.

Industrial Applicability

[0034] Thus, this smokers' article ensures smoke filtration by the cylindrical filter member and the mouthpiece tubular portion directly connected to the said filter member, but not over its total length. In smoking it practically keeps the mouthpiece portion, which is held between fingers, clean of the smoke and smoke deposits in spite of the fact that the whole mouthpiece is made of the same fibrous filtering material. The smoke, as flowing through the mouthpiece tubular portion, lodges on such a long inner surface, but does not pass through it. Therefore the smoker's fingers do not absorb smoke sediments and remain clean.

Claims

1. A smokers' article characterized in that it comprises a tobacco rod wrapped in a separate sleeve made of cigarette paper, a resilient and elongated mouthpiece which is connected to said rod and has the size of a cardboard mouthpiece and which is made of a pressed fibrous material and includes a filter member arranged on the tobacco rod side and made integral with the tubular portion of said mouthpiece, said filter member being a continuous cylinder with a diameter equal to that of the mouthpiece tubular portion and which total length exceeds that

of said tobacco rod; the length of the said cylindrical filter member being at least half as great as the length of the tobacco rod and at least one third as great as the length of the said tubular portion of the mouthpiece, the tobacco rod being connected to the elongated mouthpiece with a paper ring overlapping, at least, the surface of said cylindrical filter member, and the fibrous material of the mouthpiece being pressed to such a degree so as to ensure restoration of the tubular portion open flow area after removal of compressive load under which the tubular portion has been fully compressed.

2. The smokers' article according to claim 1 wherein acetate fiber is used as the material for making said resilient mouthpiece and said cylindrical filter member.
3. The smokers' article according to claim 1 wherein an additional filter member is arranged between said tobacco rod and said cylindrical filter member.
4. The smokers' article according to claim 1 wherein an additional filter member is arranged behind said cylindrical filter member inside said mouthpiece tubular portion.
5. The smokers' article according to claim 1 wherein an additional filter member is made of activated carbon or similar filtering material.
6. The smokers' article according to claim 1 wherein said resilient and elongated mouthpiece made of a pressed fibrous material is wrapped in a paper sleeve and wherein a paper ring is connected to the outer surface of said paper sleeve with a glue.
7. The smokers' article according to claim 1 wherein said resilient and elongated mouthpiece made of a pressed fibrous material has the plasticized outer surface.
8. The smokers' article according to claim 7 wherein a polyvinyl acetate emulsion is used as a plasticizer.
9. The smokers' article according to claim 7 wherein said resilient and elongated mouthpiece made of a pressed fibrous material with the plasticized outer surface has a ring portion which is not covered with a plasticizer, is arranged behind said paper ring and provides additional air inflow in smoking.

55

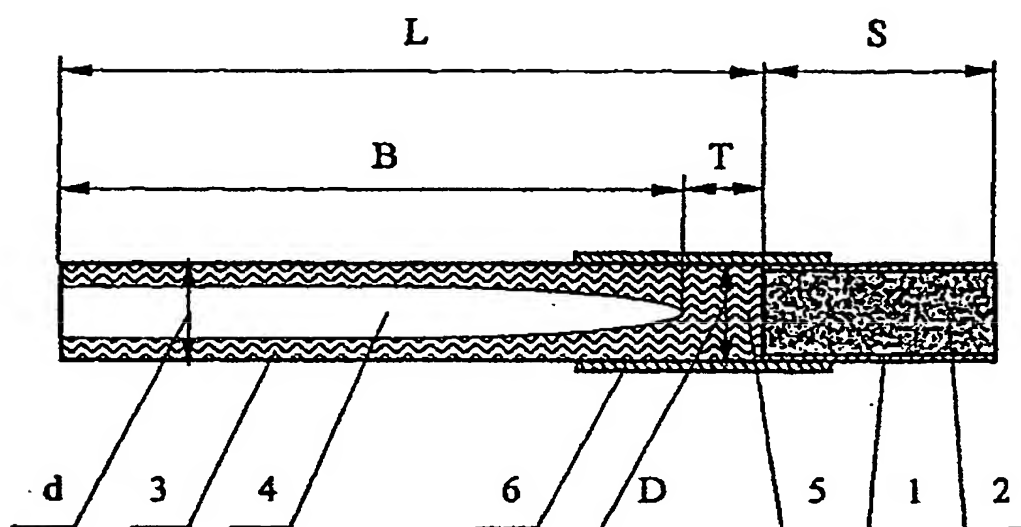


Fig. 1

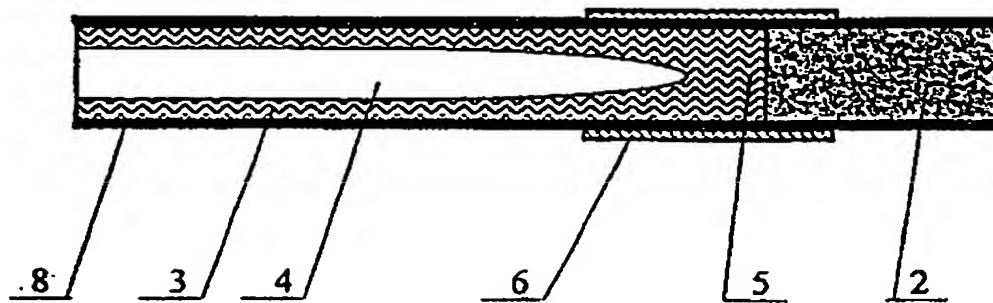


Fig. 2

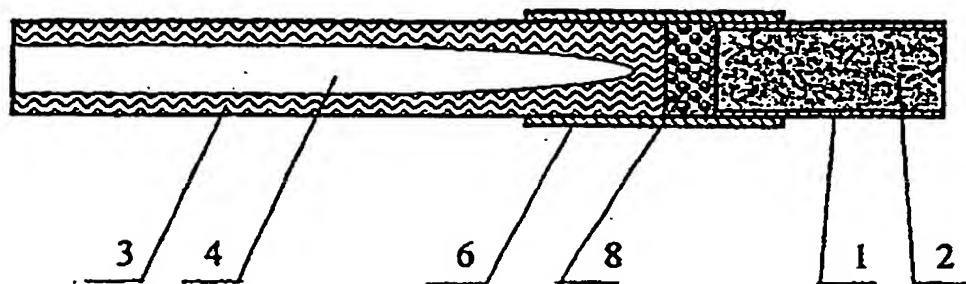


Fig. 3

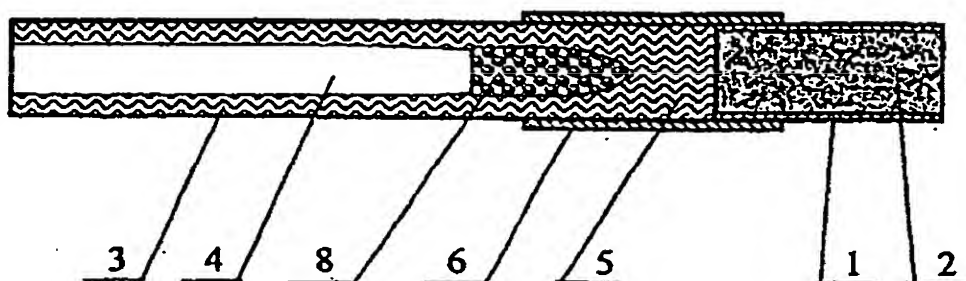


Fig. 4

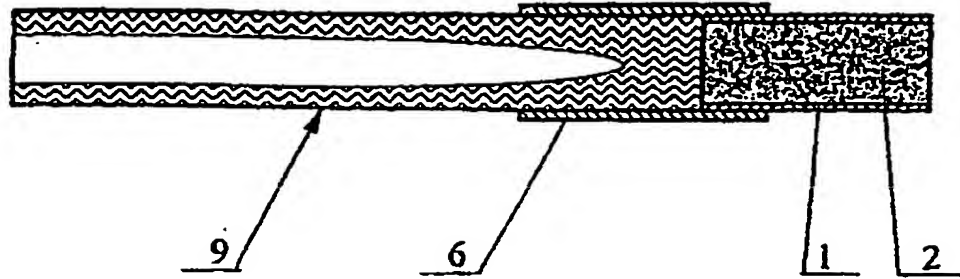


Fig. 5

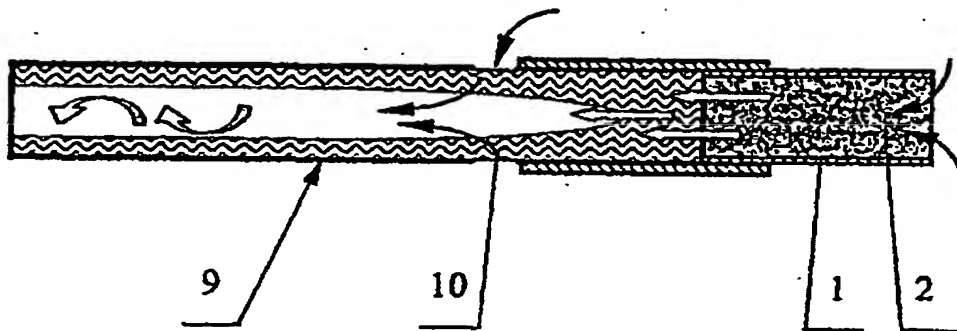


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/RU 00/00060

A. CLASSIFICATION OF SUBJECT MATTER :

IPC 7 :A24D 1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 :A24D 1/04, 3/00-3/18

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SU 1170955 A (BRAUN AND WILLIAMSON TOBACCO CORPORATION) 30 July 1985 (30.07.85)	1-6
A	GB 1093536 A (DESMOND WALTER MOLINS et al.) 6 December 1967 (06.12.67)	1-6
A	US 3738375 A (GEORGE C. DOUMAS) 12 June 1973 (12.06.73)	1-6
A	US 3994306 A (AMERICAN FILTRONA CORPORATION) 30 November 1976 (30.11.76)	1-6
A	DE 3345001 A1 (H.F. & PH.F. REEMTSMA GMBH & CO) 20 June 1985 (20.06.85)	1-6



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"A" document member of the same patent family

Date of the actual completion of the international search
03 July 2000 (03.07.00)Date of mailing of the international search report
20 July 2000 (20.07.00)Name and mailing address of the ISA/
RU

Authorized officer

Facsimile No.

Telephone No.



(43) Date of publication:
05.09.2001 Bulletin 2001/38

(21) Application number: 99981545.3

(22) Date of filing: 29.10.1999

(51) Int. Cl.⁷: **A24D 1/04, A24D 3/04,
A24B 15/00, A24B 15/28,
A24B 15/18, B01D 47/00,
C01B 17/16, C01B 17/20,
B01J 8/00**

(86) International application number:
PCT/US99/25490

(87) International publication number:
WO 00/25611 (11.05.2000 Gazette 2000/19)

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 29.10.1998 US 181859

(71) Applicant: Philip Morris Products Inc.
Richmond Virginia 23234 (US)

(72) Inventors:
, KOLLER, Kent, B.

Chesterfield, VA 23838 (US)
, WRENN, Susan, E.
Chesterfield, VA 23832 (US)
, HOUCK, Willie, G., Jr.
Richmond, VA 23235 (US)
, PAINE, John, B. III
Midlothian, VA 23235 (US)

(74) Representative:
Marlow, Nicholas Simon
Reddie & Grose
18, Theobalds Road
London WC1X 8PL (GB)

(54) **CIGARETTE FILTER**

(87) This international application for which the EPO is a designated office has not been republished by the EPO according to article 158(1) EPC.

Cette demande internationale pour laquelle l'OEB est office désigné n'a pas été republiée par l'OEB en vertu de l'article 158(1) CBE.

Diese internationale Anmeldung, für die das EPA Bestimmungsamt ist, würde, gemäß Artikel 158(1) EPÜ, vom EPA nicht wieder veröffentlicht.